DEVELOPING THE j-QAF e-LEARNING APPLICATION FOR CHILDREN ON ISLAM'S OBLIGATORY DUTIES (FARDHU AIN) UNDER THE TOPIC 'IBADAT'

A thesis submitted to the Graduate School in partial fulfillment of requirements for the degree of Master of Science (Information Technology) in Universiti Utara Malaysia

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ABSTRAK

Pembelajaran berbantukan komputer telah menjadi satu gaya pembelajaran terkini di sekolah-sekolah dan pusat pengajian tinggi. Jika dahulu guru-guru di sekolah menggunakan papan hitam dan buku teks, tetapi sekarang guru-guru telah didedahkan dengan penggunaan komputer sebagai langkah yang lebih berkesan dan menarik. Di Malaysia, penggunaan komputer telah bermula sejak tahun 1966, sejak ia diperkenalkan, kerajaan berusaha untuk mengaplikasikannya dalam pelbagai bidang seperti perniagaan, pendidikan dan dalam kehidupan. Pelbagai usaha dilakukan oleh kerajaan untuk meningkatkan penguasaan pelajar terhadap penggunaan komputer. Ianya bermula pada tahun 1980-an, kerajaan telah memperkenalkan kelab komputer melalui kegiatan kokurikulum di sekolah-sekolah. Dalam RMK-9, program Pembestarian sekolah diperkenalkan secara berperingkat. Ianya merangkumi tiga perkara iaitu perkakasan ICT yang dibekalkan ke sekolah, perisian kursus dan sistem aplikasi dan juga bimbingan latihan untuk pentadbir sekolah, guru, ibu bapa, dan komuniti setempat. Pembelajaran berasaskan e-pembelajaran telah mula digunakan di sekolah-sekolah seluruh Malaysia samada menggunakan CD ROM atau melalui laman web. Kajian ini adalah bertujuan untuk membantu kanak-kanak memahami topik ibadat melalui aplikasi e-pembelajaran j-QAF. Pembangunan aplikasi e-pembelajaran j-QAF menggunakan teori dua kod dari Pavio 1986, teori pembelajaran aktif dari Baddley 1992 dan teori bebanan kognitif dari Chanddler & Sweller 1991. Dari segi rekabentuk, teori pembelajaran multimedia daripada Richard Mayer digunakan untuk memastikan rekabentuknya boleh difahami dan menarik perhatian kanak-kanak. Keempat-empat teori ini dikaitkan antara satu sama lain untuk membangunkan aplikasi e-pembelajaran j-QAF. Teori dua kod menjelaskan manusia dalam menganalisa maklumat menggunakan dua cara iaitu dengan mengekod maklumat dalam bentuk gambarajah dan dalam bentuk suara. Jadi berdasarkan teori ini, kita dapat membangunkan aplikasi e-pembelajaran dengan memasukkan dua elemen ini iaitu gambar dan suara. Ini kerana menurut teori pembelajaran aktif akal manusia dapat memproses secara aktif ketika proses pembelajaran berlaku. Namun otak manusia tidak dapat menerima semua maklumat yang disampaikan. Jadi teori bebanan kognitif digunakan untuk mengkaji bahawa jumlah maklumat untuk diproses dalam satu-satu masa adalah terhad. Berdasarkan ketiga-tiga teori ini, maka teori pembelajaran multimedia daripada Richard Mayer iaitu prinsip multimedia, prinsip imbangan spatial, prinsip imbangan masa, prinsip perkaitan, prinsip modaliti, prinsip ulangan dan prinsip perbezaan individu yang dapat menseimbangkan otak manusia telah dibina. Sesi penilaian telah dijalankan di Sekolah Rendah Kebangsaan Kupang.

ABSTRACT

Computer Aided Learning (CAL) has becomes the learning style at school and high institution. If before this, teachers used blackboard and text book, but nowadays teachers has been exposed with computer as an effective and interesting way. In Malaysia, utilization of computer was started in 1966, as long as it introduce, government try to apply it various field such as business, education, and life. Much effort has been done by government to increase the student skill in computer. In 1980's, government was introduce computer club through the co curriculum activity at schools. In RMK-9, smart school project has been introduced by stages. It include three things, which is ICT hardware that supply to school, specific software and system application and also guidance for school admin, teacher, parent and community places. Learning through e-learning has been used at whole school in Malaysia either through CD ROM or online e-learning. The objective of this research is to help children understand the "ibadat" topic via j-QAF e-learning application. j-QAF e-learning application is developed by using dual coding theory by Paivio 1986, working memory theory by Baddley 1992 and cognitive load theory by Chanddler & Sweller 1991. In fact of design, multimedia learning theory by Richard Mayer has been used to make sure design of e-learning can be understood by children. All the theory are related each other to develop the j-QAF e-learning application. Dual coding theory explain that human brain in analyst information used two ways which is human's process information through dual channels, one auditory and the other visual. So based on this theory, researcher has been developed e-learning with included two elements which is visual and verbal (auditory). It because according working memory theory human brain can actively process during learning process. But human brain can't accept all the information that has been presented. So cognitive load theory has been used to assess that amount of information is limited to be process. Based on the three theories, so multimedia learning theory by Richard Mayer has been developed which is multimedia principle, spatial contiguity principle, temporal contiguity principle, Coherence Principle, Modality Principle, Redundancy Principle, and Individual Differences Principles which can balance the human brain. Evaluation session has been done at Sekolah Rendah Kebangsaan Kupang.

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DEDICATION

To my mum Rohimi binti Tuajin,
My dad Aziz bin Man,
My sister Nurul Nadwan,
My fiance Mohd Bukhari Bin Mustafa,
for their love, patience, and support.

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LIST OF ABBREVIATIONS

ADDIE	Analysis, Design, Development, Implementation and Evaluation
CAL	Computer Aided Learning
CD-ROM	Compact Disc
CLT	Cognitive Load Theory
ICT	Information Communication Technology
j-QAF	Jawi, al-Quran, Arab, Fardhu Ain.
LAN	Local Area Network
MUDPY	Multimedia Design and Planning Pyramid
T & L	Teaching and Learning
TV	Television
VCD	Video Compact Disc
WAN	Wide Area Network

CHAPTER 1

BACKGROUND OF THE STUDY

Nowadays, information can be retrieved faster through digital process due to the development of technology. Many companies around the world try to conquer some technology parallel to the development. According to Norkumala Awang (2006) development of information technology enables people to receive information easier. In this information era, education plays vital roles in our life. Without knowledge, we will be left behind from others. Education field also undergoes the revolution of modification. From traditional teaching method which includes the use of chalk and blackboard, we use computers in the classroom. Baker (2005) claims that this approach changes the pedagogy traditional approach which is from using chalk and talk with teachers become the facilitators who search for the information. Besides, teachers are not solely the knowledge source and main dispersion of information.

According to Yusup (2002) the history of technology in Malaysian education system started around 1970. The use of technology in education has been discussed widely in workshops, forums, conferences, magazines and newspapers by that time. Technology in education in Malaysia can be divided into 3 ages, which are pre age and independent post (evolution of visual source and hear see), the second age is around 1972-1979 (influence of communication media, radio, and educational television), and the third age is around 1980-1990 (evolution of teaching based on computer resources) (Yusup, 2002). In teaching, teacher can use ICT as a medium to

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